



MCB PB8H

Data Sheet V1.0



The GACIA PB8H in a miniature circuit breaker is a high performance MCB suitable for domestic, utility as well as industrial applications. The extended range of busbars is also available to connect the items together.

The PB8H has a breaking capacity of 10kA, is available in a range of current up to 63A and in characteristics B, C or D.

PB8H miniature circuit breaker

CE

CB

KEMA
EUR

RoHS

PB8H is a MCB compliant to product standard IEC/EN 60898 and with the following main technical features

- Breaking capacity 10kA (60898-1)
- Rated current up to 63A
- 1p, 2p, 3p, 3p+n, 4p
- Characteristics B, C, D

Application benefits

- Supply possible from top and bottom
- Pin and fork type busbar connection (above and below) up to 30mm² and cable connection up to 50mm² cables.
- Terminal cover with sealing possibility for operator safety
- Locking possibility for the handle in off position by attribute
- Family feeling in the GACIA range modular components

MCB PB8H

Technical Data



Type			PB8H	
Standards			IEC/EN 60898-1	
Certification			CE, CB, KEMA KEUR	
Country of origin			CN	
RoHS Compliance Status			Compliant, No Exemption	
Number of poles			1p, 2p, 3p, 4p, 3p+n	
Tripping characteristics			B, C, D	
Rated current	I_n	A	$1 \leq I_n \leq 63$	
Rated voltage	U_e	V	230/415	
Min. operating voltage		V	12	
Max. operating voltage		V	264/440	
Insulation voltage	U_i	V	500 V AC	
Overvoltage category			III	
Pollution degree			2	
Rated frequency		Hz	50 - 60	
Rated breaking capacity acc. to IEC/EN 60898	I_{cu}	A	10.000	
Rated breaking capacity acc. to IEC/EN 60947-2 (only referring to short circuit test)	Ultimate I_{cu}	kA	10*	
	Service I_{cs}	kA	7.5*	
Tripping characteristics acc. To IEC/EN 60947-2			4x I_n , 8x I_n , 12x I_n	
Category acc. to IEC/EN 60947-2			A	
Rated impulse withstand voltage (1.2/50)	U_{imp}	kV	6	
Dielectric test voltage at ind. freq. for 1 min.		kV	2 kV (50 / 60Hz, 1 min.)	
Thermomagnetic release – characteristics	B: $3 I_n \leq I_n \leq 5 I_n$		■	
	C: $5 I_n \leq I_n \leq 10 I_n$		■	
	D: $10 I_n \leq I_n \leq 20 I_n$		■	
Energy limiting class acc. to EN 60898-1			3	
Mechanical features	Housing	Insulation group I - II, RAL 7035		
	Toggle	Insulation group II, RAL 5017		
	Contact position indication	Green / Red window		
	Electrical life	operations	4.000	
	Mechanical life	operations	10.000	
	Protection degree acc. to EN 60529	housing	IP4X	
		terminals	IP2X	
	Shock resistance acc. to IEC/EN 60068-2-27			25g – 2 shocks - 13ms
	Vibration resistance acc. to IEC/EN 60068-2-6			0.35 mm or 5 g - 20 cycles at 5...150...5 Hz
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30	°C/RH	28 cycles with 55°C/90-96% and 25°C/95-100%	
	Reference temperature for setting of thermal element	°C	30	
	Ambient temperature (with daily average $\leq +35$ °C)	°C	-25... +70	
	Storage temperature	°C	-40... +70	

* IEC/EN 60947-2 certificate and test-report are not available at present, the use of these values is the responsibility of the user

MCB PB8H

Technical Data



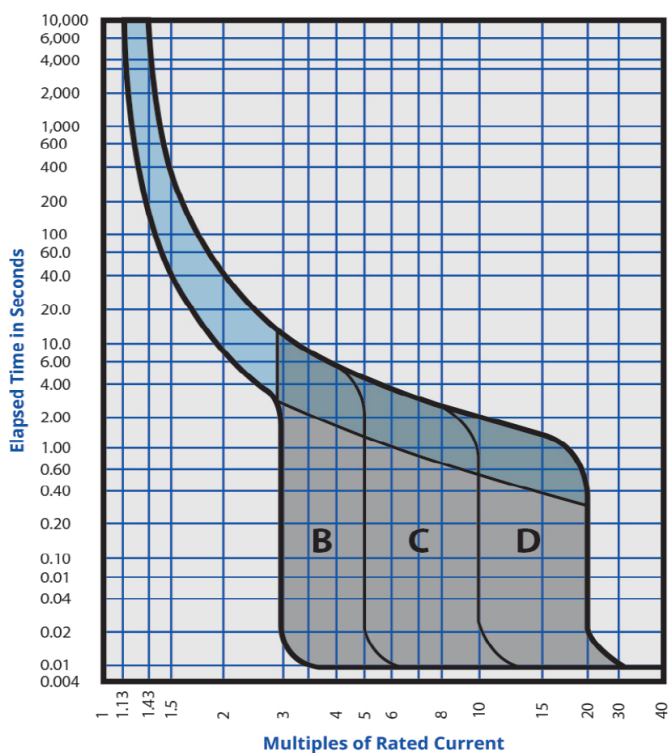
Type			PB8H				
Installation	Terminal type	bottom / top	Twin-purpose terminal (lift / open-mouthed)				
	Terminal size for cables	bottom / top	mm ²	35/25			
	Terminal size for PIN busbar	bottom / top	mm ²	10/16			
	Terminal size for FORK busbar	bottom / top	mm ²	M6 - 10/16			
	Solid /stranded wiring			1x 1.5mm ² - 35mm ² 2 x 1.5mm ² - 25mm ² *			
	Flexible wires with or without ferrules			1x 1.5mm ² - 25mm ² 2 x 1.5mm ² - 10mm ² *			
	Tightening torque	bottom / top		2-3Nm (2.5Nm)			
	Stripping length of the cable			10mm			
	Mounting			on DIN rail EN 60715 (35mm) by means of mounting clip			
	Mounting position			Any			
Supply from			Top / bottom terminals				
			1p	2p	3p	4p (3p+n)	
Dimensions	Height	mm	81				
	Width	mm	17,5	35	52,5	70	
	Depth	mm	77				
	Weight	kg	0,11	0,22	0,33	0,44	
Packing	Packing A	QTY	pcs	12	6	4	3
		Dimensions (H x W x D)	mm	220 x 88 x 82			
		Weight	kg	1,38			
	Packing B (x A)	QTY	pcs	120	60	40	30
		Dimensions (H x W x D)	mm	425 x 234 x 190			
		Weight	kg	14			
CN-code			85362010				
Combination with auxiliary elements	Auxiliary contact		Yes				
	Alarm contact		Yes				
	Shunt trip		Yes				
	Auxiliary contact for bottom fitting		NA				
	Undervoltage release		Yes				
	Overvoltage release		NA				
	Motor operating device		NA				

* Check local installation rules, this type of connection is not advised. Special add-on terminals are available.

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Tripping Characteristics



Performance in altitude*

Elevation [m]	2000	3000	4000	5000	6000
Rated current [A]	1 x I _n	0,95 x I _n	0,92 x I _n	0,90 x I _n	0,88 x I _n
Rated voltage [V]	1 x U _n	0,85 x U _n	0,75 x U _n	0,65 x U _n	0,55 x U _n

* the MCB is designed for standard level operations, performance information on higher altitude is not available

Influence of adjacent devices

Number of devices	1	2-3	4-5	6-9	≥10
Correction factor	1	0,9	0,8	0,7	0,6

These values are provided by recommendation IEC 61439-1 and standards EN 61439-1. In order to avoid having to use these coefficients there must be good ventilation and the devices must be kept apart using the spacing element article number 2119000010 (0.5 module).

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Derating in temperature *PB8H*

Max operating current depending on the ambient temperature (daily average $\leq +35$ °C)

In [A]	Ambient temperature [°C]										
	-25	-15	-5	10	30	40	45	55	60	65	70
1	1,2	1,2	1,2	1,1	1	0,97	0,95	0,91	0,91	0,91	0,91
2	2,4	2,4	2,3	2,1	2	1,2	1,9	1,8	1,8	1,8	1,8
3	3,7	3,5	3,4	3,3	3	2,9	2,8	2,8	2,7	2,7	2,7
4	4,9	4,8	4,7	4,3	4	3,9	3,8	3,6	3,5	3,5	3,5
6	7,4	7,2	7,0	6,5	6	5,8	5,7	5,5	5,4	5,3	5,3
8	9,9	9,5	9,2	8,7	8	7,8	7,7	7,5	7,2	7,1	6,9
10	13,5	12,8	12,3	11,4	10	9,7	9,5	9,0	8,8	8,6	8,6
13	16,5	15,9	15,4	14,3	13	12,5	12,2	11,7	11,5	11,2	11,0
16	20,0	19,4	18,7	17,6	16	15,0	15,0	14,0	14,0	13,0	13,0
20	25,0	24,0	23,2	21,9	20	19,0	19,0	18,0	18,0	17,0	17,0
25	30,5	29,5	28,5	27,0	25	24,0	23,0	23,0	22,0	21,0	21,0
32	39,8	38,5	37,2	35,0	32	31,0	30,0	29,0	28,0	28,0	27,0
40	50,0	48,4	46,7	44,0	40	39,0	38,0	36,0	35,0	34,0	33,0
50	63,0	60,8	58,6	56,3	50	48,0	47,0	44,0	42,0	40,0	38,0
63	80,7	77,8	74,7	71,6	63	61,0	60,0	57,0	55,0	52,0	50,0

Power loss PB8H

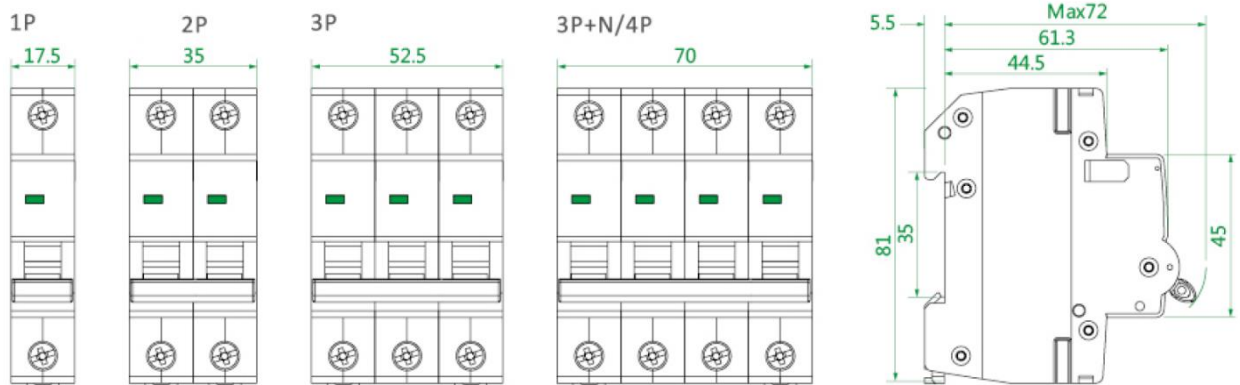
In [A]	1p	2p	3p	4p	3p+n
1	1,5	3,0	4,5	6,0	6,0
2	2,0	4,0	6,0	8,0	8,0
3	1,8	3,6	5,4	7,6	7,6
4	2,0	4,0	6,0	8,0	8,0
6	2,2	4,4	6,6	8,8	8,8
8	2,6	5,2	7,8	10,4	10,4
10	1,5	3,0	4,5	6,0	6,0
13	1,7	3,4	5,1	6,8	6,8
16	1,7	3,4	5,1	6,8	6,8
20	2,0	4,0	6,0	8,0	8,0
25	2,2	4,4	6,6	8,8	8,8
32	2,6	5,2	7,8	10,4	10,4
40	2,9	5,8	8,7	11,6	11,6
50	3,8	7,6	11,4	15,2	15,2
63	4,4	8,8	13,2	17,6	17,6

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Technical Data

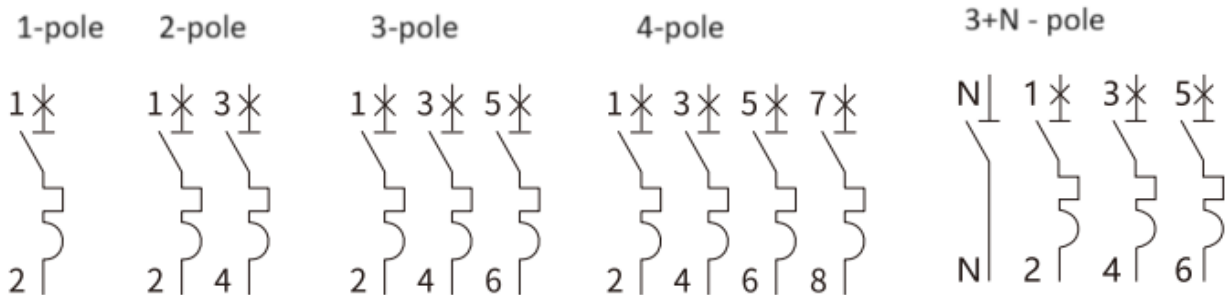
Overall dimensions

All measurements in mm



PB8H (dimensions)

Connection diagram



MCB PB8H

Order codes



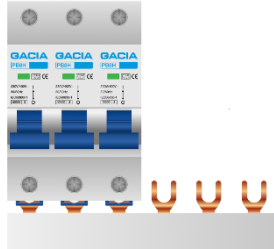
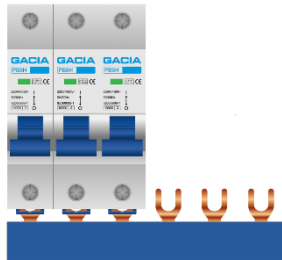


Char.	Inom	1p	2p	3p	3p+n	4p
B	1 A	5101170001	5101270001	5101370001	-	5101470001
	2 A	5101170002	5101270002	5101370002	-	5101470002
	3 A	5101170003	5101270003	5101370003	-	5101470003
	4 A	5101170004	5101270004	5101370004	-	5101470004
	6 A	5101170006	5101270006	5101370006	-	5101470006
	8 A	5101170008	5101270008	5101370008	-	5101470008
	10 A	5101170010	5101270010	5101370010	5101670010	5101470010
	13 A	5101170013	5101270013	5101370013	-	5101470013
	16 A	5101170016	5101270016	5101370016	5101670016	5101470016
	20 A	5101170020	5101270020	5101370020	5101670020	5101470020
	25 A	5101170025	5101270025	5101370025	5101670025	5101470025
	32 A	5101170032	5101270032	5101370032	5101670032	5101470032
	40 A	5101170040	5101270040	5101370040	5101670040	5101470040
	50 A	5101170050	5101270050	5101370050	5101670050	5101470050
	63 A	5101170063	5101270063	5101370063	5101670063	5101470063
C	1 A	5101180001	5101280001	5101380001	-	5101480001
	2 A	5101180002	5101280002	5101380002	-	5101480002
	3 A	5101180003	5101280003	5101380003	-	5101480003
	4 A	5101180004	5101280004	5101380004	-	5101480004
	6 A	5101180006	5101280006	5101380006	-	5101480006
	8 A	5101180008	5101280008	5101380008	-	5101480008
	10 A	5101180010	5101280010	5101380010	5101680010	5101480010
	13 A	5101180013	5101280013	5101380013	-	5101480013
	16 A	5101180016	5101280016	5101380016	5101680016	5101480016
	20 A	5101180020	5101280020	5101380020	5101680020	5101480020
	25 A	5101180025	5101280025	5101380025	5101680025	5101480025
	32 A	5101180032	5101280032	5101380032	5101680032	5101480032
	40 A	5101180040	5101280040	5101380040	5101680040	5101480040
	50 A	5101180050	5101280050	5101380050	5101680050	5101480050
	63 A	5101180063	5101280063	5101380063	5101680063	5101480063
D	1 A	5101190001	5101290001	5101390001	-	5101490001
	2 A	5101190002	5101290002	5101390002	-	5101490002
	3 A	5101190003	5101290003	5101390003	-	5101490003
	4 A	5101190004	5101290004	5101390004	-	5101490004
	6 A	5101190006	5101290006	5101390006	-	5101490006
	8 A	5101190008	5101290008	5101390008	-	5101490008
	10 A	5101190010	5101290010	5101390010	5101690010	5101490010
	13 A	5101190013	5101290013	5101390013	-	5101490013
	16 A	5101190016	5101290016	5101390016	5101690016	5101490016
	20 A	5101190020	5101290020	5101390020	5101690020	5101490020
	25 A	5101190025	5101290025	5101390025	5101690025	5101490025
	32 A	5101190032	5101290032	5101390032	5101690032	5101490032
	40 A	5101190040	5101290040	5101390040	5101690040	5101490040
	50 A	5101190050	5101290050	5101390050	5101690050	5101490050
	63 A	5101190063	5101290063	5101390063	5101690063	5101490063
Auxiliary contact	1CO				5101000010	
Alarming contact	1CO				5101000020	
Shunt release	230V AC				5101000030	
Undervoltage release	230V AC				5101000050	
Terminal cover	yellow	-	5102290010	-	5102490010	



MCB PB8H

Order codes for connective rail

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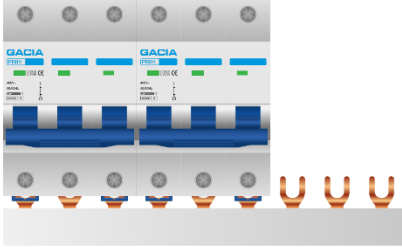
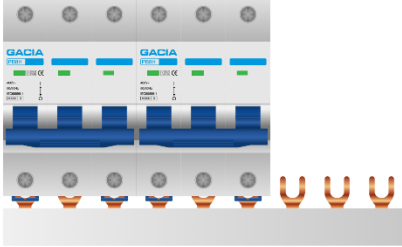
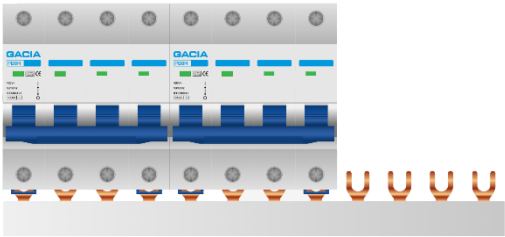

Busbar / connective rail type	No. devices	10mm ² (closed end - non cuttable)		16mm ² (cut to size with end-caps)	
		PIN	FORK	PIN	FORK
1 pole (phase) L-L-L ... (17.8mm) 	2x 1p	2305101002	2305111002	-	-
	3x 1p	2305101003	2305111003	-	-
	4x 1p	2305101004	2305111004	-	-
	5x 1p	2305101005	2305111005	-	-
	6x 1p	2305101006	2305111006	2306010006	2306110006
	7x 1p	2305101007	2305111007	-	-
	8x 1p	2305101008	2305111008	-	-
	9x 1p	2305101009	2305111009	2306010009	2306110009
	10x 1p	2305101010	2305111010	-	-
	11x 1p	2305101011	2305111011	-	-
	12x 1p	2305101012	2305111012	2306010012	2306110012
	13x 1p	2305101013	2305111013	-	-
	15x 1p	-	-	2306010015	2306110015
	18x 1p	-	-	2306010018	2306110018
	21x 1p	-	-	2306010021	2306110021
	24x 1p	-	-	2306010024	2306110024
54x 1p	-	-	2306160100	2306161100	
1 pole (neutral) N-N-N ... (17.8mm) 	2x 1p	2305101902	2305111902	-	-
	3x 1p	2305101903	2305111903	-	-
	4x 1p	2305101904	2305111904	-	-
	5x 1p	2305101905	2305111905	-	-
	6x 1p	2305101906	2305111906	2306019006	2306119006
	7x 1p	2305101907	2305111907	-	-
	8x 1p	2305101908	2305111908	-	-
	9x 1p	2305101909	2305111909	2306019009	2306119009
	10x 1p	2305101910	2305111910	-	-
	11x 1p	2305101911	2305111911	-	-
	12x 1p	2305101912	2305111912	2306019012	2306119012
	13x 1p	2305101913	2305111913	-	-
	15x 1p	-	-	2306019015	2306119015
	18x 1p	-	-	2306019018	2306119018
	21x 1p	-	-	2306019021	2306119021
	24x 1p	-	-	2306019024	2306119024
54x 1p	-	-	2306160101	2306161101	
1 pole (phase) L-L-L ... (35.6mm) 	2x 1p	2305171002	2305181002	-	-
	3x 1p	2305171003	2305181003	-	-
	4x 1p	2305171004	2305181004	-	-
	5x 1p	2305171005	2305181005	-	-
	6x 1p	2305171006	2305181006	2306010206	2306110206
	9x 1p	-	-	2306010209	2306110209
	12x 1p	-	-	2306010212	2306110212
	27x 1p	-	-	2306160120	2306161120
1 pole (phase) N-N-N ... (35.6mm) 	2x 1p	2305171902	2305181902	-	-
	3x 1p	2305171903	2305181903	-	-
	4x 1p	2305171904	2305181904	-	-
	5x 1p	2305171905	2305181905	-	-
	6x 1p	2305171906	2305181906	2306019206	2306119206
	9x 1p	-	-	2306019209	2306119209
	12x 1p	-	-	2306019212	2306119212
	27x 1p	-	-	2306160121	2306161121

* pictures are indicative – other combinations are possible

MCB PB8H

Order codes for connective rail

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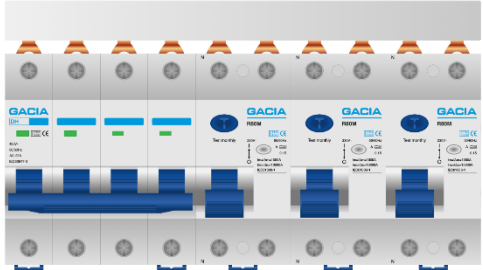

Busbar / connective rail type	No. devices	10mm ² (closed end - non cuttable)		16mm ² (cut to size with end- caps)	
		PIN	FORK	PIN	FORK
2 pole (phase neutral) N1-N1-N1... 12-12-12... 	2x 2p	2305102004	2305112004	-	-
	3x 2p	2305102006	2305112006	2306020006	2306120006
	4x 2p	2305102008	2305112008	2306020008	2306120008
	5x 2p	2305102010	2305112010	2306020010	2306120010
	6x 2p	2305102012	2305112012	2306020012	2306120012
	7x 2p	2305102014	2305112014	2306020014	2306120014
	8x 2p	2305102016	2305112016	2306020016	2306120016
	9x 2p	2305102018	2305112018	2306020018	2306120018
	10x 2p	-	-	2306020020	2306120020
	11x 2p	-	-	2306020022	2306120022
	12x 2p	-	-	2306020024	2306120024
	27x 2p	-	-	2306160200	2306161200
	3N pole (3 phase neutral) N1-N2-N3... 	6x 2p	2305105012	2305115012	2306050012
9x 2p		2305105018	2305115018	2306050018	2306150018
12x 2p		-	-	2306050024	2306150024
28x 2p		-	-	2306160500	2306161500
3 pole (3 phase) 123-123-123... 	2x 3p	2305103006	2305113006	2306030006	2306130006
	3x 3p	2305103009	2305113009	2306030009	2306130009
	4x 3p	2305103012	2305113012	2306030012	2306130012
	5x 3p	2305103015	2305113015	2306030015	2306130015
	6x 3p	2305103018	2305113018	2306030018	2306130018
	7x 3p	-	-	2306030021	2306130021
	8x 3p	-	-	2306030024	2306130024
	18x 3p	-	-	2306160300	2306161300
	4 pole (4 phase) N123-N123... 123N-123N... 	2x 4p	2305104008	2305114008	2306040008
3x 4p		2305104012	2305114012	2306040012	2306140012
4x 4p		2305104016	2305114016	2306040016	2306140016
5x 4p		-	-	2306040020	2306140020
6x 4p		-	-	2306040024	2306140024
14x 4p		-	-	2306160400	2306161400
	Open mouth covers for busbar PIN	2115900010			

* pictures are indicative – other combinations are possible

MCB PB8H

Order codes for connective rail

Supplied by SEP EUROPE®


Busbar / connective rail type	No. devices	10mm ² (closed end - non cuttable)		16mm ² (cut to size with end-caps)	
		PIN	FORK	PIN	FORK
Top Combi-rail N123-N1-N2-N3-(N1) 	1x4p + 3x2p	2305195310	2305195010	-	-
	1x4p + 4x2p	2305195312	2305195012	-	-
Bottom Combi-rail N123-N1-N2-N3-(N1) 	1x 4p + 3x 2p	2305195110	2305195210	-	-
	1x 4p + 4x 2p	2305195112	2305195212	-	-


* pictures are indicative – other combinations are possible


MCB PB8H

Order codes accessories

Supplied by SEP EUROPE®

Add-on terminals Reference image	Wire size	PIN		FORK	
		Grey	Blue	Grey	Blue
	1x50mm ² solid/stranded 1x35mm ² flexible	2115900060	2115900120	2115900090	2115900150
	2x25mm ² solid/stranded 2x16mm ² flexible	2115900070	2115900130	2115900100	2115900160
	3x16mm ² solid/stranded 3x10mm ² flexible	2115900080	2115900140	2115900110	2115900170

Marker – spacer Reference image	Description	Code
	Component Spacer 0,5mm	2119000010

Lockout Reference image	Description	Code
	Lockout set - complete	2115909099
	Locking devices adaptor	2115909015
	Locking device screw adaptor	2115909010
	Padlock with 2 identical keys	2115909020
	Warning tag (English)	2115909030

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